

## REMARKS

In view of the above amendments and following remarks, reconsideration and further examination are requested.

In reply to the objection to the disclosure as expressed in section 2 on page 2 of the Office Action, the specification has been amended so as to recite that the cross-sectional size of the electrode pad is more than twice as large as the cross-sectional size of the connection terminal, as shown in Figs. 1 - 2B. Please note that the objection to the disclosure was discussed with Examiner Patel on September 11, 2006, during which time Examiner Patel indicated that the aforementioned amendment would obviate the objection to the disclosure.

Claims 1 and 4 have been amended, and claims 11 and 12 have been canceled.

Claims 1, 2, 4-6 and 12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Capote et al. in view of Gilleo et al.; claim 7 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Capote et al. and Gilleo et al, and further in view of Haas et al.; and claim 11 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Capote et al. and Gilleo et al., and further in view of Itou.

These rejections are respectfully traversed, and currently amended claim 1 is believed to be allowable over these references either taken alone or in combination for reasons that follow.

Currently amended claim 1 recites

An electronic circuit device comprising:  
an electronic component having a connection terminal on one side thereof;  
a circuit board made of a polymeric resin sheet **having a thickness of from 50 $\mu\text{m}$  to 400 $\mu\text{m}$**  and having an electrode pad thereon;  
an adhesive sheet having a through-hole; and  
a conductive adhesive filled in said through-hole,  
wherein said electronic component and said circuit board are bonded to each other via said adhesive sheet, and said connection terminal on said electronic component and said electrode pad on said circuit board are bonded to each other by said conductive adhesive filled in said through-hole, and  
wherein a cross-sectional size of said connection terminal is

less than a corresponding cross-sectional size of said through-hole, and said corresponding cross-sectional size of said through-hole is less than a corresponding cross-sectional size of said electrode pad, **with said corresponding cross-sectional size of said electrode pad being at least twice as large as said cross-sectional size of said connection terminal.**

A circuit board made of a polymeric resin sheet, such as a polyethylene terephthalate sheet, having a thickness of from  $50\mu\text{m}$  to  $400\mu\text{m}$  is weak against heat. Accordingly, when such a circuit board and an electronic component are bonded via an adhesive sheet, warping of the circuit board results due to heat applied during this bonding, which in turn results in the electrode pad becoming displaced relative to the connection terminal of the electronic component, whereby it is not possible to electrically connect the electrode pad and the connection terminal with a high degree of accuracy. Accordingly, the electrode pad has to be sufficiently large to compensate for such displacement and ensure that the electrode pad and the connection terminal become electrically connected to one another during the bonding.

To more clearly bring out this feature, claim 1 has been amended to recite the thickness of the circuit board, and also to recite the size of the electrode pad relative to the size of the connection terminal. That is, claim 1 now requires the circuit board to have a thickness of from  $50\mu\text{m}$  to  $400\mu\text{m}$ , and also requires the electrode pad to have a cross-sectional size that is at least twice as large as a corresponding cross-sectional size of the connection terminal. Accordingly, the electronic circuit device as recited in claim 1 is assured to exhibit an electrical connection between the electrode pad and the connection terminal even if the thin circuit board warps during a bonding operation.

None of the relied-upon references is concerned with the problem addressed by Applicants. In this regard, Capote et al. uses a flexible bonding member for preventing peeling which would otherwise occur due to a difference between heat expansion coefficients of a resin sheet substrate and an electronic component, Itou coats an electrode pad with resin for preventing peeling of the electrode pad, and Gilleo et al. and Haas et al. are also not concerned with the problem addressed by Applicants. Thus, none of these references disclose or suggest an

electronic circuit device including a polymeric circuit board having a thickness of from 50 $\mu$ m to 400 $\mu$ m, with an electrode pad on the circuit board having a cross-sectional size that is at least twice as large as a corresponding cross-sectional size of a connection terminal of an electronic component mounted on the circuit board.

Thus, because independent claim 1 now provides for a more clear nexus between the invention and the problem solved thereby, because none of the relied-upon references are concerned with this specific problem, and because none of these references disclose or suggest the specific limitations now recited in claim 1, it is respectfully submitted that claim 1 is allowable over the references either taken alone or in combination. Accordingly, claims 1, 2 and 4-7 are allowable.

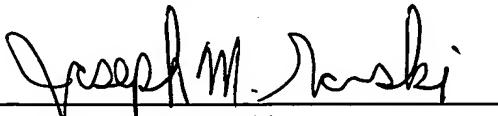
Additionally, if the Examiner continues to reject the claims, then the Examiner is respectfully requested to elaborate as to why an electrode pad having a cross-sectional size twice as large as that of a connection terminal is taught or suggested by Itou. In this regard, Applicants' undersigned representative has studied this reference along with the explanation provided in section 6 of the Office Action, but is unclear as to how the Examiner has reached the conclusion that in view of the teachings of Itou one would have found it obvious to have a cross-sectional size of an electrode pad be twice as large as that of a connection terminal.

In view of the above amendments and remarks, it is respectfully submitted that the present application is in condition for allowance and an early Notice of Allowance is earnestly solicited.

If after reviewing this Amendment, the Examiner believes that any issues remain which must be resolved before the application can be passed to issue, the Examiner is invited to contact the Applicants' undersigned representative by telephone to resolve such issues.

Respectfully submitted,

Norihito TSUKAHARA et al.

By: 

Joseph M. Gorski  
Registration No. 46,500  
Attorney for Applicants

JMG/nka  
Washington, D.C. 20006-1021  
Telephone (202) 721-8200  
Facsimile (202) 721-8250  
September 27, 2006